

**AMENDMENTS TO THE CLAIMS**

This listing of claims will replace all prior versions and listings of the claims in the application:

**Listing of Claims:**

1-16 (Canceled)

17. (Currently Amended) A diagnostic golf club system comprising:

    a diagnostic golf club comprising a club head, a shaft attached to the club head, a plurality of strain gauges attached to the shaft, the strain gauges capable of measuring data related to the golf club during a golf swing, and an internal memory device including a non-volatile flash buffer memory capable of receiving and storing data from the strain gauges;

    a computer located separate and spaced apart from the diagnostic golf club for processing the data stored in the internal memory device; and

    an interface mechanism removably coupled to the diagnostic golf club for providing communication between the diagnostic golf club and the computer, the interface mechanism including a connection plug having a plurality of pins for connection to a plurality of receptors on the diagnostic golf club,

    wherein the internal memory device is capable of storing data for multiple swings of the diagnostic golf club until the data is uploaded to the computer via the interface mechanism, and

wherein the computer uses the data related to the diagnostic golf club during a golf swing to calculate six independent forces and moments, the six independent forces and moments including axial force, transverse shear forces, bending moments, and torsion.

18. (Previously Presented) The system according to claim 17 wherein the diagnostic golf club further includes a circuit board positioned within a hollow interior of the shaft, the circuit board including the internal memory device, a power control circuit, a signal conditioning circuit for the plurality of strain gauges, and a serial communication circuit.

19. (Previously Presented) The system according to claim 17 wherein the diagnostic golf club is selected from the group consisting of a driver, a fairway wood, an iron and a putter.

20. (Previously Presented) The system according to claim 17 wherein the interface mechanism further includes a serial interface device.

21-24. (Canceled)

25. (Currently Amended) A diagnostic golf club system comprising:  
a diagnostic golf club comprising a club head, a shaft attached to the club head, means for measuring swing loads of a golfer during a golf swing, the swing load measuring means disposed on the shaft, and an internal memory device including a non-volatile flash buffer memory capable of receiving and storing swing load measurements generated by the swing load measuring means;

a computer located separate and spaced apart from the diagnostic golf club for processing the swing load measurements stored in the internal memory device; and

means for transferring the swing load measurements to the computer,  
wherein the internal memory device is capable of storing multiple swing load measurements indicative of multiple golf swings until the measurements are transferred by the transferring means to the computer, and

wherein the computer uses the swing load measurements to calculate six independent forces and moments, the six independent forces and moments including axial force, transverse shear forces, bending moments, and torsion.

26. (Previously Presented) The system according to claim 25 wherein the golf club is selected from the group consisting of a driver, a fairway wood, an iron and a putter.

27. (Previously Presented) The system according to claim 25 wherein the non-volatile flash buffer memory is a ring buffer memory.

28. (Previously Presented) The system according to claim 25 wherein the transferring means includes a connection plug and a serial interface device, the connection plug having a plurality of pins for connecting to a plurality of receptors within the shaft for transferring the swing load measurements from the diagnostic golf club to the computer.

29. (New) The system according to claim 17 wherein the computer processes the six independent forces and moments to determine an appropriate shaft flex profile for an individual golfer.

30. (New) The system according to claim 25 wherein the computer processes the six independent forces and moments to determine an appropriate shaft flex profile for an individual golfer.